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ABSTRACT

Parental and peer influence on adolescents account for a substantial portion of the variation in health behavior developing in late adolescence. Of high school students sampled, 50% describe the influence attempts of their mothers, fathers and peers as neutral on most health behavior. Smoking is the exception to the pattern with mothers and fathers strongly discouraging and peers mildly encouraging smoking. Peer and parental influences are consistent with each other regarding weight watching, health food selection and optional exercise. The most frequent response for these behaviors, other than neutral, is that of mild encouragement. It seems clear that there is the potential for health educators, government health agencies and others to increase efforts to involve parents and peers in more actively influencing the establishment of health maintaining habits in adolescents. (EN)

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Parental and Peer Influence on Development of Health Maintenance Behavior in Adolescence

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Parental and Peer Influences on Development of Health Maintenance Behavior in Adolescence

Recent efforts to analyze the influence of parents and peers on adolescent behavior have yielded results which seem generally consistent with an hypothesis offered by Brittain (1963). He suggested that adolescent choices can be influenced by either peers or adults, or by both. Brittain presented adolescents with hypothetical dilemmas which called for meeting either peer or parental expectations. In situations involving clothing choices or choices of school courses, the students favored alternatives expected by peers. In situations with more relevance to their aspirations in the larger, adult society, such as a part-time job choice, or obtaining school honors, the adolescents favored parental expectations.

Other studies which have found parental influence on adolescent behavior to be greater than peer influence, have generally found it for situations involving issues more important to the adolescents or matters related to their future life goals (Brittain, 1967; Kandel and Lesser, 1969, 1970; Larson, 1972; Quine, 1973; Curtis, 1974, 1975). Studies finding greater peer influence on adolescents have found it for behaviors more relevant to their current life style, such as smoking (Levitt and Edwards, 1970; Hamilton, Cameron, and McCann, 1976), marijuana use (Kandel, 1973, 1974), and clothing-cosmetic fashions (Kernan, 1973). Lasseigne's (1975) study is an exception to the pattern in finding greater peer influence on adolescents' responses to questionnaire items dealing with several character traits.

In contrast with views of parental and peer influence as conflicting, a series of studies find these influences to be nearly equal and/or consistent with each other so that adolescents in disagreement with parental expectations are usually also in disagreement with peer expectations (Kandel and Lesser, 1969; Hamm and Hoving, 1971: Kandel, 1974; Larson, 1972; Mumns, 1972; Gray and Gaier, 1974). There is evidence that parental influence may decline for adolescents who are older or in later high school grade levels, but the drop in parental influence may be replaced primarily by greater independence of the adolescent from any influence, rather than an increase in peer influence on the adolescent.

Except for smoking and drug use, the peer and parental influences on adolescent health behaviors have received little study. There is increasing recognition that the development of individual responsibility for the maintenance of one's health is the answer to the high proportion of health problems in North America that result from life style problems rather than unavoidable illnesses. If late adolescence can be viewed as the transition period in which individuals develop from being subject to parental controls and social influences on health practices toward more independent habits that tend to persist through adulthood, then understanding and utilizing these influences in adolescence may be of central importance in encouraging health consciousness.

In an interview and questionnaire study of personality-social influence on health maintenance behavior in high school and university students, Hamilton, Cameron, and McCann (1976) found little correlation among different health practices of the students. The exception was a cluster of small correlations involving weight watching, exercising, and healthy food selection, which tended to apply to females. There

was little evidence of the consistent effort across several health practices that would be expected of "health conscious" individuals. Analysis of the influences on health behavior reported by the students indicated little significant influence except that from peers and parents. The minor role of other influences and the lack of relationship to personality and belief measures was also interpreted as reflecting the low priority of health behaviors for adolescents and those influencing them.

The focus of the present study is on the relative influence of peer and parental examples and influences on smoking, weight watching, selection of healthy foods and use of physical exercise by late adolescents. While smoking is evidently a part of the adolescent's current life style, and has been shown to be heavily influenced by peers, it is assumed that the other health behaviors are perceived by the adolescents as incidental behaviors with no obvious predictions suggested for the relative influence of parents and peers.

Method

Subjects

The university student sample was composed of 70 volunteers from introductory level general or child psychology courses. There were 45 females, 25 males, and their mean age was 22.4, with a range from 17 to 43. The high school sample was obtained from two Ontario public high schools.

The Guelph high school sample was composed of 39 females and 24 males, with a mean age of 16.5. These students were those who returned

parental permission letters and appeared for appointments out of a random sample of 100 eleventh and twelfth grade students.

The Kitchener high school sample was composed of 52 males and 70 females, with a mean age of 17.1. These students were all the members of four eleventh and twelfth grade physical education classes grouped together. Thus, while the university sample is of course unrepresentative of the general population, there is no apparent reason for regarding the high school sample as atypical of Ontario public high school students.

Interview

An interview of 40 structured questions, and four-open ended questions was utilized. After obtaining demographic information, the interview covered the individual's practices in the four health areas (smoking, weight control, healthy food selection, exercise) and explored the subject's awareness of social influences relevant to each behavior. For example, the questions regarding smoking were as follows:

Do you smoke cigarettes (yes, no)? What would you say are the reasons why you smoke (don't smoke) (open-ended)? If the answer is yes, how many cigarettes do you smoke each day (½ pack or less, about 1 pack, about 2 packs, more than 2½ packs)? Does your father smoke (don't know, yes, no)? Does your mother smoke (don't know, yes, no)? Think of some people who are your friends. Do they smoke cigarettes (don't know, some do, most do, none do)? Who can you think of that has directly encouraged you to smoke cigarettes (circle more than one if you think of several different people) (friends - peers, brother or sister, mother, father, other relatives, other person [indicate what

type of person, for example "employer"], no one)? Who can you think of that has directly discouraged you from smoking (same answer format as for preceding question)?

The interview questions concerning weight control, selection of healthy foods or avoidance of unhealthy foods, and use of optional physical activities to benefit health or fitness followed a similar format. Questions concerning encouragement before they started smoking were added for high school students.

The interviews were conducted by the authors. Although the interview was designed to be highly structured or even self-administered, the initial sessions for each interviewer were recorded and compared with the others to assure comparability. With the Kitchener high school sample, cooperation with school personnel necessitated groups of subjects completing the interview form themselves with guidance from the experimenters. Comparison with the individually interviewed high school sample by t tests for each variable indicated little effect attributable to the differences in procedures.

Questionnaire

The personality and attitude measures of the questionnaire are described more completely in Hamilton, et al[1], and will be described and utilized only briefly in the present report.

Health Knowledge - Ten items developed for the study.

Illness Susceptibility-Vulnerability - Subjects estimate their chances of having fifteen health problems. (Gochman, 1972).

Internal-External Perception of Control - Twelve items from Kirscht (1972), six general, six health related.

Self-Esteem - Ten items from Rosenberg (1972).

Introversion-Extraversion - Ten items from Eysenck and Eysenck (1969, p. 213-215).

Attitude Toward Physical Activity - Ten items from "physical activity for aesthetic experience" and ten from "physical activity for health and fitness" (Kenyon, 1968) with only the latter items used for the high school student sample.

Temporal Orientation - Ten items ranging from past to future time orientations were selected from the scale developed by Braley and Freed (1971) and used for the high school students only.

Results

Ten months following the first interview and questionnaire session the first 25 university students that could be reached by phone were asked to appear for a readministration of the interview and questionnaire. A $5.00 fee was offered for their participation. Twenty students both agreed and kept their appointments. Test-retest reliability for interview items concerning peer and parental examples and encouragement ranged from -.19 to 1.00, with a median of .55 ($p<.05$). In view of the scores being for answers to single questions rather than test scores, the restricted score range for the answers which limits the possible correlation, and the ten-month time span between interviews the reliability seems generally satisfactory. It should be noted, as well, that in most cases the students had different interviewers on the two occasions. Part of the fluctuation in answers reflects changes in the students' situations. This was clearest with regard to the examples and influences

from friends which seemed less reliable than the same figures for parents. Students had often moved and had changed course schedules twice in the interval, resulting in changes in friends. Students also mentioned changes in their smoking behavior (3 stopped or started), movement on or off diets for their parents, seasonal changes in their exercise patterns, and other changes they were aware of.

For the questionnaire scores disappointing reliability figures were obtained for Health Knowledge ($r = -.16$), Self-esteem ($r = .28$), and General Internal-External Perceptions of Control ($r = .20$). More satisfactory figures resulted for feelings of illness susceptibility-vulnerability ($r = .72$), Introversion-Extraversion ($r = .71$), Attitude Toward Physical Acitvity (health and fitness) ($r = .64$), and Health Internal-External Perceptions of Control ($r = .60$).

In a multiple regression analysis using parental and peer models of the behaviors, social encouragement-discouragement of health behaviors, personality and attitude questionnaire scores, and the individual's reasons for their behavior as predictors of the variance in health maintenance behavior, the variance accounted for with the university students was 62% for smoking, 76% for weight watching, 61% for selecting health foods, and 70% for obtaining optional exercise. Although statistically significant ($p<.01$), these overall figures would, of course, reflect some degree of capitalization on chance.

Table 1 shows the variance in the four health maintenance behaviors accounted for by separate multiple regression analyses of parental influences, peer influences, or the personality measures. The maximum number of variables included in each analysis is indicated in parentheses in the table. The parent or peer influence variables include the data on parent

or peer examples across all four health behaviors and the data on parent or peer encouragement-discouragement of the individual's behavior across all four health practices. Parent or peer examples or encouragement across all health behaviors were used as predictors of each health behavior since previous analyses indicated numerous significant correlations between social influences on one health behavior and the individual's performance on another health behavior.

Insert Table 1 about here

In a finer analysis, parental and peer example and encouragement-discouragement of specific health maintenance efforts were contrasted for their relative influence on that specific behavior. Data for mothers and fathers were combined so that a single index was available for parental examples of smoking, peer examples of smoking, parental encouragement-discouragement of smoking, peer encouragement-discouragement of smoking, and so on for each health behavior. An hierarchical multiple regression analysis was used with age (and sex when both sexes were combined) removed first, parental and peer examples considered second, and parental and peer direct encouragement-discouragement of the behavior last. For each pair of parental or peer, modeling or encouragement influences, the best predictor of each health behavior is shown in Table 2, for all students and separately for each sex. Considering the total samples, the models of health behavior provided by peers were more influential than parental models in six of the eight comparisons.

For explicit encouragement-discouragement peers were more influential than parents in four of the seven comparisons completed. Females across the two different samples were more influenced by peers in eleven comparisons and by parents in 5, while the figures for males were 7 and 9. However, a 2 x 2

Insert Table 2 about here

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x^2 (2.03, $p>.05$) for the sex by source of influence comparison does not indicate that the sex differences are relaible. The relative influence of parents and peers appears to be nearly equal in both samples with peer influence emerging as the best predictor in 13 of 23 comparisons for the high school sample and 15 of 24 comparisons for the university sample. It should be kept in mind that the influence of the models was statistically controlled while the effects of encouragement-discouragement were estimated.

Discussion

The present analysis demonstrates that parental and peer influence on adolescents account for a substantial portion of the variation in health behavior developing in late adolescence. The influence apparently exerted by these two sources must, of course, be evaluated relative to their efforts to use their potential influence with the adolescent. The high school students described these influence efforts on a five point scale. Examination of the frequency distribution for their responses (Appendix A) shows over 50 percent of the adolescents describe the influence attempts of their

mothers, fathers, and peers as neutral on most of the health behaviors. The exceptions are with regard to smoking where the neutral responses drop to 34.2 percent for mothers and 48.4 percent for fathers, and healthy food selection where the neutral responses drop to 37 percent for mothers. "Mildly discouraged" or "Mildly encouraged" are the categories receiving most of the balance of the responses. Thus, the parental and peer influence demonstrated results from a relatively weak effort by these sources of influence.

Smoking proves to be an exception to the pattern of largely neutral influence reported by the high school students. Thirty-two to thirty-seven percent of the mothers and fathers are described as strongly discouraging smoking by both the total sample and by the smokers describing influences before they began smoking.

However, 41 percent of the smokers also report that their peers mildly encouraged smoking before they began to smoke. For the 31 percent of the high school sample who are smokers then, it would appear that the mild encouragement of peers was a better predictor of their behavior than was the strong discouragement of their parents. This finding, and the regression data for high school students, is consistent with Brittain's hypothesis and the studies cited which indicate heaviest peer influence on behaviors which are a part of adolescent life style.

The university students were simply asked to specify any individuals they could recall who had "directly encouraged you to smoke" and then, individuals who had discouraged them from smoking (42.9 percent were smokers). The only group of individuals that were mentioned by more than 3 percent of the students as having encouraged them to smoke were peers,

and peer encouragement was reported by 52.9 percent of the students. Those mentioned as discouraging smoking were mothers (48.6 percent), fathers (38.6 percent), peers (34.3 percent), other relatives (18.6 percent), siblings (12.9 percent), and teachers (8.6 percent). Again it is clear that the majority in each of these groups are not described as discouraging smoking, and 27.1 percent of the university students said that no one had discouraged them from smoking. In both groups of students, from 31 to 45 percent of the parents serve as models for smoking and almost all of the students describe some or most of their friends as smokers.

While the university sample must be viewed as different from and more selected than the high school sample, it is interesting that parental influence accounts for relatively more of the variation in smoking as well in the other health behaviors for the university sample in the regression analyses using several parental or peer influence variables as predictors. However, this is probably a statistical artifact reflecting the greater number of variables used in the analysis for parents, which limits the significance level of the results, and the same pattern is not evident in the last analysis using influences specific to each health behavior as predictors. In that analysis slightly more influence from peers than from parents is shown for both samples. The tentative comparison possible between the two samples does not suggest great differences in the patterns of parental and peer influence for high school and university students, however further investigation of changing influences in late adolescence is needed.

The observations of several researchers (Kandel and Lesser, 1969; Hamm and Hoving, 1971; Kandel, 1974, Larson, 1972; Munns, 1972, Gray and Gaier, 1974) that peer and parental influences are often consistent with each other is supported by the responses of the high school students regarding weight watching, healthy food selection, and optional exercise. For each of these behaviors the most frequent response, other than neutral, described for either parents or peers is that of mild encouragement.

It seems clear from the present findings that there is the potential for health educators, government health agencies, and others to increase efforts to involve parents and peers in more actively influencing the establishment of health maintaining habits in adolescents. While the stability over time of adolescent health behavior is in need of study, it seems likely that establishing health maintenance behavior in adolescents, who are still relatively responsive to social and educational influences, would be more effective than efforts to improve the habits of adults.

While the combined influence of the personality and attitude characteristics measured could account for part of the variation in health behavior, the correlations between individual measures and any of the health behaviors are minimal and generally not significant. While this may in part reflect weakness in the measures, it may also be that health consciousness is at a relatively low level in the present samples so that health behavior is little influenced by the characteristics measured. If this is the case it should be possible to demonstrate stronger relationships of personality and attitude characteristics with health behavior in groups formed around health interests.

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Footnotes

[1] Available upon request from the first author.

Appendix A

Patterns of Parental and Peer Encouragement

of Health Behaviors for the High School Sample

	Strongly Discouraged	Mildly Discouraged	Neutral	Mildly Encouraged	Strongly Encouraged
Smoking (all)					
Mothers	36.4%	25.5%	34.2%	3.3%	.5%
Fathers	31.7	18.6	48.6	1.1	
Peers	8.9	10.6	67.8	12.8	
Smoking (smokers before starting to smoke, n=86)					
Mothers	37.2	15.1	46.5	1.2	
Fathers	31.4	10.5	57		1.2
Peers	3.8	5.1	50	41	
Weight Watching					
Mothers	1.6	7.1	59.8	20.7	10.9
Fathers	1.1	4.9	78.3	9.8	6.0
Peers	3.3	4.9	72.8	14.7	4.3
Healthy food selection					
Mother	.5	4.3	37.0	29.3	28.8
Father	.5	1.1	64.1	17.9	16.3
Peers	1.1	4.3	80.4	11.4	2.7
Optional Exercise					
Mother	.5	2.7	49.5	30.4	16.8
Father		2.2	51.6	28.3	17.9
Peers		3.8	54.9	28.8	12.5

Table 1

Percentage of Variation in Four Health Behaviors Accounted for by Parental, Peer, or Personality Variables in Separate Multiple Regression Analyses

Health Behavior	High School Sample, N=185		University Sample, N=70	
Smoking				
Parents	8%	(13)[b]	40%	(21)[b]
Peers	48[a]	(10)	29	(12)
Personality measures	6	(8)	17	(8)
Weight Watching				
Parents	9	(13)	38	(21)
Peers	4	(10)	11	(12)
Personality measures	3	(8)	18	(8)
Healthy Food Selection				
Parents	8	(13)	36	(21)
Peers	10[a]	(10)	20	(12)
Personality measures	10[a]	(8)	31[a]	(8)
Hours of Optional Exercise				
Parents	8	(13)	29	(21)
Peers	13[a]	(10)	21	(12)
Personality measures	10[a]	(8)	8	(8)

[a] $p < .05$

[b] Maximum number of variables available in the multiple regression analysis.

Table 2

Selection of Specific Parental or Peer Influences as Best Predictors of Four Health Behaviors Using An Hierarchical Multiple Regression Analysis with Models Considered Before Explicit Encouragement

HEALTH BEHAVIOR	HIGH SCHOOL SAMPLE		UNIVERSITY SAMPLE	
	MODELS	ENCOURAGEMENT	MODELS	ENCOURAGEMENT
Smoking				
Males	Peers	Parents (13%)[b]	Parents	Parents (17%)
Females	Peers	Peers (8)	Peers	Parents (4)
TOTAL	Peers	Parents (9)[c]	Parents	Parents (8)
Weight Watching				
Males	Peers	Parents (17)[c]	Peers	Parents (30)
Females	Peers	Parents (2)	Parents	Peers (25)[c]
TOTAL	Peers	Parents (8)[c]	Peers	Peers (18)[c]
Healthy Food Selection				
Males	Parents	Parents (4)	Peers	Peers (8)
Females	Parents	Peers (9)	Parents	Peers (10)
TOTAL	Parents	[a] (5)	Peers	Peers (13)
Hours of Optional Exercise				
Males	Peers	Parents (15)[c]	Peers	Parents (15)
Females	Peers	Peers (20)[c]	Peers	Peers (10)
TOTAL	Peers	Peers (15)[c]	Peers	Peers (9)

a. Neither parental or peer encouragement reached tolerance levels sufficient to be entered in this analysis.

b. Variance accounted for by age, parental and peer models of the behavior, and parental and peer encouragement-discouragement of the behavior (plus sex in the Total rows).

c. $p < .05$